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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,512	10/24/2003	Lahoucine Ettaleb	10326-78US JA/Im	7391

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EXAMINER

MASINICK, MICHAEL D

ART UNIT PAPER NUMBER

2125

DATE MAILED: 04/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/691,512

Applicant(s)

ETTALEB ET AL.

Examiner

Michael D. Masinick

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/24/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This is the first office action on the merits for this case. Claims 1-17 are pending.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the wording of the claims does not provide for a tangible or useful outcome or the method of claim 1 or the computer product of claim 12. There is no output from either claim that produces a useable number. The "measuring" step of both claims does seem to produce a meaningful output, but this step of recognizing or using this output is not noted in the independent claim.
3. Claims 2-11 and 13-17 inherit this deficiency, but many solve this issue if written in independent form with claim 2 as they do use this value to produce an output.
4. Claim 12 needs to be written to comply with the current US Practice of having the computer program be embodied on a computer readable medium.

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 8, 9, 12, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Publication 20020077711 to Nixon et al. Examiner notes that Nixon incorporates by reference and claims priority to Patent No. 6,298,454, some parts of which are relied upon for this rejection.

7. Referring to claim 1 and 12, Nixon shows a control loop diagnostic method (and computer program) comprising the steps of: measuring an error in a control loop over time to determine a power spectral density of said error (Paragraph 57); determining a best fit analytical function describing said power spectral density (Paragraph 58); and measuring a diagnostic value from a difference between said best fit analytical function and said power spectral density of said error (beginning of paragraph 61).

8. Referring to claim 2, Nixon shows wherein said analytical function describes a poorly-tuned control loop exhibiting resonance around a resonant frequency (paragraph 61).

9. Referring to claims 8 and 9, Nixon shows a step of determining from said difference whether corrective response is necessary (Figure 2).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 3-5, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication 20020077711 to Nixon et al in view of U.S. Patent No. 5,784,273 to Madhavan.

12. Referring to what has been shown above in regards to claims 3 and 14, Nixon, while showing many species of data manipulation and analysis, does not specifically show a second order approximation model defined by a natural frequency, a damping ratio and a variance.

13. This mathematical function for finding oscillations that fall outside of a given range is well known in the art. Madhavan shows a method for pinpointing whether "chatter" may occur in a manufacturing toolset. While this is a distinctly separate use of the mathematically concept from the current use of analyzing control loops, one of ordinary skill at the time the invention was made would have been motivated to use the mathematical functions of Madhavan using a second order approximation model defined by a natural frequency, a damping ratio and a variance to find potential errors in the control loops of Nixon because it can be used in real time which allows quick correctly of problems pinpointed by the function (abstract of Madhavan).

14. Referring to claim 4 and 15, Madhavan shows wherein said analytical function is determined to have substantially a same intensity value for a peak around said natural frequency as said power spectral density and substantially a same slope on at least one side of said peak as said power spectral density (Section H, theorem review).

15. Referring to claim 5, Madhavan shows wherein said analytical function is automatically determined from said power spectral density ("scale of fluctuation").

*Allowable Subject Matter*

16. Claims 6, 7, 10, 11, 16, and 17 would be allowable over the prior art currently made of record if rewritten to fully overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, and any other non art-related objections set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D. Masinick whose telephone number is (571) 272-3746. The examiner can normally be reached on Mon-Fri, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read "L. P. Picard". The signature is written in a cursive style with a large, looped capital "P" at the end.

LEO PICARD  
SUPERVISOR PATENT EXAMINER  
TECHNOLOGY CENTER 2100